SOPAC Trip Report 255

April 1998

TRIP REPORT

Cook Islands

Wed 18 March – Wed 9 April 1998

Leslie Allinson
Information Technology Manager

Prepared for: South Pacific Applied Geoscience Commission (SOPAC)

TRIP REPORT

Cook Islands. Wed 18 Mar - Wed 9 Apr 1998

Leslie Allinson
Information Technology Manager
11 Apr 1998

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PURPOSE

- GIS Workshop – Introducing MapInfo
- Ministry of Marine Resources
  - Restoration of network (parts supplied by SOPAC)
  - Integration and operation of Library computer (supplied by SOPAC)
  - GIS development
  - Communications development
  - Provide training as requested
- National Disaster Management Office
  - GIS Assistance
  - IT Assistance
- Water Department
  - GIS Assistance
  - IT Assistance
- Survey Department
  - GIS Assistance
  - IT Assistance
- General
  - Advise on areas of mutual co-operation
  - Promote SOPAC's role in Cook Islands

SOPAC RESOURCES

Leslie Allinson	Wed 18 Mar – Wed 9 Apr 1998
Franck Martin	Wed 18 Mar – Wed 2 Apr 1998

TIMETABLE

Week 1 – Wed 18 Mar – Sat 21 Mar

Workshop preparation – visit Survey Department
MMR - Network restoration
MMR - E-mail and desktop installation

Week 2 – Mon 23 Mar – Sat 28 Mar

GIS Workshop

Week 3 - Mon 30 Mar – Sat 4 Apr

Water Department
National Disaster Management Office
Power Utility
Ministry of Outer Islands Development
MMR System development

Week 4 – Mon 6 Apr – Wed 8 Apr

Water and Survey Department
Power Utility
MMR - Manual and Report

GIS WORKSHOP – USING MAPINFO

Visit Survey Dept week 1 and obtained data for Workshop. Loan of LitePro from Ministry of Finance. Whiteboards provided by National Disaster Management Office.

The main focus of the visit (week 2) was the one week GIS Workshop Using where there were 18 participants. See folder with handouts for workshop content. A common task during the workshop was the conversion or translation of survey data with a non-earth projection and datum at the Post Office benchmark to UTM WGS84 with UTM zone 4 Southern Hemisphere

The workshop was evaluated by the participants and rated as successful. It was unanimously agreed that the formation of a GIS User Group would be beneficial for sharing of resources and data as well as a forum for development of technical procedures that would asst policy makers in planing and infrastructure development. It was agreed that MMR would host the first of regular monthly meetings of the group.

An analysis of the evaluation forms is shown in Attachment 1 and is summarised as follows:

83% or 15 out of 18 participants responded.

The rating of the workshop inputs was as follows where options where 4 = Excellent, 3 = Good, 2 = Average and 1 = Inadequate

Evaluation of workshop	Rating
Training aids – projector	**3.9**
MapInfo as a GIS product	**3.7**
Overall assessment of workshop	**3.3**
Handouts	**3.3**
Sample data	**3.2**
Presentations	**3.2**

The respondents rated the workshop excellent to good.

The rating of the participants understanding of topics were as follows where 4 = Fully conversant, 3 = Conversant, 2 = Average and 1 = Need further study.

Evaluation of subject	Rating
Intro to Functions	3.1
Thematic mapping	2.9
Select and SQL Select	2.8
Projection and datum using MapInfo	2.8
Import, export and transfer of data	2.8
Layouts	2.8
Projection and datum theory	2.7
Digitising and use of GPS	2.6
Linking with Excel and Access	2.6
Raster backdrops, registration and rectification	2.5
Vector and Raster GIS	2.4
Intro to MapBasic	2.3

This table indicates that follow up workshops should place greater emphasis on MapBasic Introduction and Raster / Vector GIS as well as image backdrops.

All respondents stated that there should be a Cook Islands GIS User Group formed and it was agreed that MMR would host the first meeting on 15 Apr.

93% of respondents stated that there should be a follow up workshop and 40% requested all subjects at a more advanced level.

40% of respondents use or will be using MapInfo offshore and coastal applications while 27% will use it for utilities.

All participants received certificates at closing ceremony. See Attachment 2.

MINISTRY OF MARINE RESOURCES (MMR)

Supplied following equipment:

No	Description
1	HP Vectra 486/50DX SPU S/N 3410A03499
1	NEC C600 15" monitor S/N 6082102427
1	Iomega Zip Drive
1	Network cable, terminators, tees and crimp connectors
1	MapInfo Professional 4.5 upgrade
1	MapBasic 4.5
1	Microsoft Office 97 Professional upgrade
6	Iomega Zip cartridges

Restored network that had been damaged during cyclone Pam in Dec 1997.

Upgraded all appropriate computers to Win95, Office 97 Pro, Mapinfo/MapBasic, Publisher 97, Norton 95 v2.0, McAfee VisrusScan 3.1.4 (Feb 1998 datafile 3102).

Setup Win95 desktop as server and shared resources including printer and folder sets.

Installed Library computer and integrated with network. Developed system to export library database (CDS-ISIS) to Word 97 document that can be accessed on \\sever\dta\library folder.

Discussed Internet options with Cook Islands Telecom (Oyster.net) and Gateway Polynesia (Gatepoly) and Raymond. He elected to remain with Gatepoly as e-mail only as Cook Islands Telecom could offer no controls over connect time for full Internet after 3 free hours has been reached.

Visited Maritime Surveillance Centre and met John Fallon. Downloaded MDaemon 2.7 via their Oyster.net connection.

Installed Wingate 2.1 and MDaemon 2.7 and arranged Gatepoly to provide aliases to single mailbox rar@mmr.gov.ck. Note that an "all addresses" could not be used as there is a mailbox for Penrhyn named pen@mmr.gov.ck.

Other tasks included:upgrade of Sonny's Toshiba T1900 notebook and repair of Aututaki desktop.

Two systems were developed using MapInfo:

- Fisheries Surveillance System using catch data from national vessels and reuse some modules from FFAMaps
- Manihiki Pearl Farm Management System

MMR to host the first Cook Islands GIS User Group meeting on 15 April.

Report and manual provided with covering letter as Attachment 2. Raymond will request SOPAC to provide attachment for Josh Mitchell for installation and operation of NT server based network. The provision of attachment is subject to availability of funds.

COOK ISLANDS TELECOM

Spoke with Phil Hendersen and determined that:

- Oyster.net will allow multiple client mailboxes at no additional charge
- No mechanism to disable HTTP for individual clients after threshold exceeded
- Bandwidth constrained to 64 Kbps. (Internet gambling?)

Following concern by MMR that there was no method to control Web access and thereby cost constraints, it was decided that Gatepoly would be a better option until gateway or ISP software was available that would prevent Web access after a set number of hours was used for a given month.

GATEWAY POLYNESIA

Visited the company who operates Gatepoly and spoke with Neil Dearlove, System Administrator. The cost is $20 per month for email only Internet with a limit of 800KB per month. Additional volume is charged at $3 per 100KB. Neil provided an aliasing service that allowed MMR to set up multiple mailboxes in Rarotonga while maintaining single Penrhyn mailbox.

MINISTRY OF OUTER ISLANDS DEVELOPMENT (MOID)

Visited MOID at request of Tenga Mana.

Restored network. Installed AutoCAD 14 to assist in export to Mapinfo.

Digital data holding consisted of a map Autitaki in AutoCad. Tenga will digitise further mapsheets.

Discussed options email network that would setup all outer islands and Ministry.

Outlined SOPAC work program with Kato Tama, Secretary and advised that he could contact SOPAC for assistance through national representative.

POWER AUTHORITY (TE APONGA UIRA)

Visited Power Authority at request of Alistair Newbigging, Survey/Drafting Officer, who had attended Workshop, to assist in data transfer.

The Power Authority had received AutoCAD Lite under MZODA funding and Rarotonga data from Survey Dept. Additional data had been added to new and existing layers.

Assistance was provided in transfer of data to MapInfo through several methods that included DXF export, DXF import, export to MID/MIF, editing MIF and subsequent import; DXF export, DXF import with projection and transform; import from DWG with projection and transform. The latter two proved most effective for large numbers of layers but it was noted that there were considerable errors in baseline data with misplaced objects by layer.

It was recommended that these problems could be addressed at GIS User Group meetings.

Discussed PREP and how Cook Islands Power Authority could explore benefits and agreed to arrange meeting with Chief Engineer. Left instructions on text file for AutoCAD to MapInfo data transfer, PREP contacts and brochures in Word 97 for Pacific Utilities Billing and Customer Management System from Computech, Fiji.

Met with Takai Howard, Manger Engineering and discussed possibilities of Cook Islands benefiting from PREP GIS projects. He was fully aware of EU funding constraints as Cook Islands not ACP country but considered that there were avenues for funding under UNDP.

He later advised that there was no UNDP funding and enquired if the SOPAC Energy Program could assist. Recommended that he contact Paul Fairbairn or Solomone Fifita via fax.

He was confident that funding could be obtained for Alistair to attend Lautoka workshop.

NATIONAL DISASTER MANAGEMENT OFFICE (NDMO)

Supplied following equipment:

No	Description
1	Iomega Zip Drive
1	MapInfo Professional 4.5
6	Iomega Zip cartridges

Visited NDMO at request of Tony Brown. Met with Tony and Tu Tangi.

Outlined SOPAC Work Program and creation of Disaster Reduction Unit. Discussed benefits through resource sharing at the regional organisation level through consolidation of programs with similar goals.

Tony saw the GIS Workshop as a completed task that had been identified at the September 1997 Coastal and Tourism Vulnerability Study. He further identified the linkage between mitigation and survey data where GIS was the common thread. GIS as a tool for planners was highlighted as well as the benefits from government and private sector involvement at Workshop where the latter is in conformance with the national reform process.

He expressed surprise that Telecom was not represented at the Workshop but it was agreed that they would be invited to the first Cook Islands User Group meeting that would be hosted by MMR on 15 April 1998.

Outlined benefits from the User Group where technical staff can create linkages across government and private sectors for technology transfer, data and resource sharing and information exchange. The outputs from the User Group would provide policy makers with access to data inventories and information that is necessary for infrastructure planning.

Tony would be fully supporting the User Group initiative and Tu would be actively participating.

Discussed access to baseline data and possibility of Survey Dept being reluctant to release data. He saw role of Survey becoming that of a regulatory body and would ensure that any such constraints were removed.

NDMO is a unit of the Cook Islands Police and will be joined by Meteorology Service 12 July 1998. It is predicted that there would be a Ministry of Safety created where the departments were Police; Disaster Reduction; Meteorology; Search and Rescue; Maritime Surveillance.

Tony would be providing letter to Director, SOPAC that would reiterate NDMO's need to access SOPAC assistance under the Cook Islands Work Program as well as thanking SOPAC for workshop and provision of software and hardware.

Tu requested copy McAfee that was provided on Zip cartridge.

FOREIGN AFFAIRS

Met with Edwin Chapmen during workshop and before departing. Brief discussion on activities and he will receive copy of manual, report and covering letter provided to Raymon Newnham.

WATER DEPARTMENT

Visit to Water Department at request of Adrian Teotahi where techniques of translation for non-earth MapInfo maps to WGS84 Zone 4 South Hemisphere were shown. Adrian has made excellent start to GIS and techniques for visual display of pipes by material/diameter/age/depth were demonstrated.

Meetings with Ben Parakoti during workshop and after return from PWA Suva workshop. Ben requested attachment for Adrian and suggested that GIS for Water Utilities may become under a regional program. Discussed benefits of GIS User Group and Ben stated that he would attend early meetings to ensure objectives of data sharing are met. He agreed that a DGPS would be essential for location of utilities.

Obtained copies of Integrated Coasted Protection and Foreshore Development Project Report (author – Wayne King?). Copies for MMR and SOPAC libraries.

SURVEY DEPARTMENT

Initial visit to Survey Department with Ben Poinia and obtained sample data for workshop.

Visit with Ben Parakoti and Andrian Teotahi. Met with Bruce Manuela and Vaipo Mataora and discussed data sharing and DGPS. Data sharing is a sensitive issue as Survey Department has been instructed to commence cost recovery but at the same time they have been severely constrained by staff cuts of 33 to 3. It should be noted that several ex Survey Department surveyors have started private companies and it would appear that the objective of the "transition" architects has been to place the Survey Department as a regulatory body or a custodian of the master data and benchmarks. It is difficult for the Department to recover costs with minimal staff and one avenue is selling digital data. However there was no pricing policy and any surveyor who left the Survey would have taken a copy the digital data. The issue of selling or ownership of disgital data shpould be addressed at GIS User Group meetings. I suggested that selling digital data to government may cost more in overhead than was received in monies.

A DGPS (Ashtek) was supplied to the Survey under NZODA funding in mid 1997 and the value was estimated to be NZD 50K. The unit consists of a base station and rover with software and manuals and has never been used due to staff cuts. The manuals were incomplete and only 5.25' floppy disks were sighted. I was assured that the software and manuals were in the safe and that the software had been installed on the server.although there was no evidence of a server. There was a clear requirement to get the DGPS operational as a fundamental component of utility mapping, outer island mapping and resource mapping and with the minimal staff in Survey it would be necessary to train staff from other departments or ministries in the use of DGPS. Recommended to Bruce that he request SOPAC through MMR to explore options in implementing DGPS as a foundation to all GIS activities in Cook Islands and he agreed,

PROMOTION

Interviewed by both Cook Islands Television and newspaper during workshop and provided newspaper with press release that included text and graphics on zip cartridge. Newspaper had taken several digital photos of workshop but when visited newspaper they had all been lost but one. This remaining photo was stored on zip cartridge that was returned to MMR.

Understood that newspaper was going to produce feature on Saturday 11 Apr.

DUTY AND TAXES

This relates to computer equipment quotes obtained for MMR.
Goods exported from New Zealand are subject to removal of New Zealand GST.
Goods imported into Cook Islands are subject to 5% duty (import levy) on computer systems parts and 10% on parts where the value is FOB. The shipping costs (CIF – FOB) are then added to this amount and 12.5% VAT is applied. Duty and VAT are exempt for aid funded projects.

CONTACTS

Ministry of Marine Resources	Tel +682 28721
PO Box 85	Fax: +682 29721
Rarotonga, Cook Islands	Email: rar@mmr.gov.ck
Raymond Newnham, Secretary	RaymondN@mmr.gov.ck
Ian Bertram, Director Development	IanB@mmr.gov.ck
Ben Ponia, Director Research	BenP@mmr.gov.ck
Josh Mitchell, Maritime Surveillence Off.	JoshM@mmr.gov.ck
Rangi Dean, Personal Assistant	RangiD@mmr.gov.ck
George Matutu, Director Finance	GeorgeM@mmr.gov.ck
Koroa Raumea, Fisheries Officer	KoroaR@mmr.gov.ck
Nooroa Roi, Fisheries Officer	NooroaR@mmr.gov.ck
Dorothy Solomona, Hatchery Manager	Pen@mmr.gov.ck
Tengi 2, Librarian	Library@mmr.gov.ck
Cook Islands Telecom	
Rarotonga, Cook Islands	
Stewart Davis	
Phil Henderson	Tel: +682 26171
Rob McFadden	
Fiore, Ken	Tel: +682 23756
PO Box 878	Email: mereken@oyster.net.ck
Rarotonga, Cook Islands	
Gateway Polynesia Ltd	Tel: +682 21283
PO Box 759	Fax: +682 21384
Rarotonga	Email: postmaster@gatepoly.co.ck
Cook Islands	
Neil Dearlove, System Administrator	
Maritime Surveillance Centre	Tel: +682 26018
PO Box 422	Fax: +682 26020
Rarotonga, Cook Islands	
John Fallon, Maritime Surveillance Adviser	Email: msaci@mscci.gov.ck
National Disaster Management Office	Tel: +682 29609
PO Box 101	Fax: +682 29331
Rarotonga, Cook Islands	
Tony Brown, Director	Email: Tony@disaster_management.gov.ck
Pacific Computers Ltd	Tel: +682 ?
PO Box 806	Fax: +682 ?
Rarotonga, Cook Islands	Email:
Mathew Harrington, Managing Director	
Te Aponga (Power Utility)	Tel: +682 20054
PO Box 112	Fax; +682 21944

Rarotonga, Cook Islands
Takai Howard, Manger Engineering
Alistair Newbigging, Surveyor/Draftsman

ATTACHMENT 1 – WORKSHOP EVALUATION

GIS WORKSHOP - USING MAPINFO
RAROTONGA, COOK ISLANDS. 22-27 MAR 1998

Number of participants	18
Number of responses	15
Responses	83%

4 = Excellent, 3 = Good, 2 = Average and 1 = Inadequate

Evaluation of workshop	**Rating**	**StDev**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Training aids – projector	3.9	0.4	4	3	4	4	4	3	4	4	4	4	4	4	4	4	4
MapInfo as a GIS product	3.7	0.5	4	4	4	4	3	3	3	4	4	4	4	3	4	4	4
Overall assessment of workshop	3.3	0.6	4	4	4	2	3	3	3	3	3	4	3	3	3	4	4
Handouts	3.3	0.7	4	3	2	3	3	2	4	3	4	3	3	4	3	4	4
Sample data	3.2	0.6	4	3	2	3	4	3	3	3	3	4	3	3	4	3	3
Presentations	3.2	0.7	3	3	3	2	3	2	3	4	4	4	3	3	3	4	4

4 = Fully conversant, 3 = Conversant, 2 = Average and 1 = Need further study

Evaluation of subject	**Rating**	**StDev**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Intro to Functions	3.1	0.7	3	4	3	2	4	2	3	3	3	4	3	3	2	4	4
Thematic mapping	2.9	0.7	3	3	3	2	4	2	3	3	2	3	2	2	3	4	4
Select and SQL Select	2.8	0.4	3	3	3	2	3	2	3	3	3	2	3	3	3	3	3
Projection and datum using MapInfo	2.8	0.7	3	3	3	2	3	3	2	2	4	4	2	3	2	3	3
Import, export and transfer of data	2.8	0.8	3	3	4	2	3	2	3	3	4	3	1	3	2	3	3
Layouts	2.8	1.0	2	3	3	2	4	1	3	2	4	4	3	1	3	4	3
Projection and datum theory	2.7	1.0	3	3	3	2	3	3	2	2	4	4	1	3	1	4	3
Digitising and use of GPS	2.6	0.8	2	3	3	2	3	2	3	2	3	4	2	1	3	4	2
Linking with Excel and Access	2.6	1.0	1	3	4	3	1	2	3	3	3	3	1	3	2	4	3
Raster backdrops, registration and rectification	2.5	0.8	3	3	2	2	3	1	2	2	3	4	2	2	2	4	2
Vector and Raster GIS	2.4	1.0	2	4	2	2	3	2	2	1	3	4	1	2	2	4	2
Intro to MapBasic	2.3	0.9	2	4	3	2	1	1	2	1	3	3	2	3	2	3	3

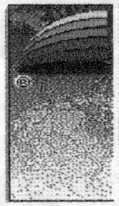
Questions	**Rating**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Should a GIS User Group be formed?	100%		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Are further GIS courses needed?	93%		Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
All at advanced level	40%		Y	Y	Y							Y		Y			Y
Specific areas of responsibility	13%												Y		Y		
Geocoding	7%						Y										
Digitising	7%										Y						
SQL Select	7%															Y	

Current and planned GIS use	**Rating**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Marine reserve areas, Fisheries surveillance	40%			Y			Y	Y			Y	Y		Y			
Power and water utilities	27%								Y	Y			Y				Y
Outer islands database	7%		Y														
Landuse mapping	7%				Y												
Reserves	7%					Y											
Disaster management	7%														Y		
Cadastral use	7%															Y	

Comments	**Rating**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Further assistance to MOID	7%		Y														
Need individual MapInfo manuals	7%												Y				

ATTACHMENT 2 – CERTIFICATE

Certificate of Achievement



This certifies that

has successfully completed the
GIS Workshop
Using Mapinfo
23 - 27 March 1998
Rarotonga, Cook Islands for
Ministry of Marine Resources,
National Disaster Management Office,
other government organisations and
private companies.
Conducted by SOPAC

Merit Award

SOPAC

Signature *Date*

Signature *Date*

Signature *Date*

ATTACHMENT 3 – MINISTRY OF MARINE RESOURCES DOCUMENTS

MINISTRY OF MARINE RESOURCES INFORMATION SYSTEM USER'S GUIDE

Ministry of Marine Resources
Rarotonga, Cook Islands

Tel: +682 28721 Fax: +682 29721 Email: rar@mmr.gov.ck

8 April 1998

Leslie Allinson, Information Technology Manager, les@sopac.org.fj

South Pacific Applied Geoscience Commission (SOPAC)
Private Mail Bag, GPO
Suva, Fiji

Tel: +679 381377, Fax: +679 370040, Web: www.sopac.org.fj

1. INTRODUCTION

This document describes the Information System that is being developed at Ministry of Marine Resources, Cook Islands. It is a living document and should be regularly updated to reflect changes.

2. NETWORK

A peer-to-peer Network has been installed via a thinlan (50-ohm coax) cable or backbone to allow the sharing of resources and data. The computer named SERVER has been elected as the server and the shared resources include hard drive folders, CD-ROM, printer and Internet access. The software to provide networking capability is Microsoft Windows 95 with gateway and postoffice applications on the server. The network layout is shown in Attachment A. It should be noted that 50-ohm terminators must be fitted at each end of the cable for the network to be operational. The thinlan network has limitations that include loss of functionality should the backbone be broken by unplugging connectors for relocating a computer and the next phase should provide a more robust solution through a star topology network with computers connected by unshielded twisted pair cables to outlets and then a central hub.

The network schematic is shown as attachment A

The networked computers include:

Name	Make	CPU	RAM	HDD	CD-ROM	OS	IP
Server	Compaq	P120	16MB	2.1GB	Yes	Win95B	192.168.2.1
GeorgeM	Compaq	P120	16MB	1.2GB	No	Win95A	192.168.2.5
BenP	LCS	P166	32MB	1.2GB	Yes	Win95B	192.168.2.6
IanB	Compucon	Cryix 5/100	16MB	800MB	Yes	Win95B	192.168.2.7
RaymondN	Toshiba	P75	16MB	750MB	Yes	Win95	192.168.2.8
JoshM	LCS	P166	32MB	1.2GB	Yes	Win95B	192.168.2.9
Library	HP Vectra	486/50	16MB	2.1GB	No	Win95	192.168.2.10
NorooaR	Toshiba	P75	16MB	750MB	Yes	Win95	192.168.2.11

The computer named NorooaR is network ready but requires Network PC Card.

All passwords have been set to “password”.

Specific IP addresses required allowing Wingate and MDaemon to function. It should be noted that the IP address range 192.168.x.x is reserved for private networks.

Other non-networked computers include:

Name	Make	CPU	RAM	HDD	CD-ROM	OS	IP
-	Toshiba	486/33	8MB	200MB	No	Win3.11	-

The following sections describe the server drives and directories and how they appear to users of other computers on the network.

2.1 Server drives

A: Floppy drive 3.5”
C: Hard drive
D: CD

2.2 Server directories

Network Neighborhood	Server Directory	Purpose	Permissions
App	C:\Data\App	Applications for install	Read only
Data	C:\Data	General data	Read only
Doc	C:\Data\Doc	Documentation	Read only
Library	C:\Data\Library	Library data	Read only
Share	C:\Share	Share	Full
Users	C:\Users	Users	Full
<User name>	C:\Users\<name>	Individual user	Depends on password

2.3 All networked computers

Network Neighborhood	Server Directory	Purpose	Permissions
Share	C:\Share	Share	Full

2.4 All computers

C:\Temp	Temporary files
C:\User	Individual users (example: C:\User\Ben

2.5 Resource Sharing

To share resources, a computer must be have the File and Printer Sharing Service installed under Settings > Control Panel > Network > Configuration. A local printer can be shared by setting Sharing by right clicking on a printer under Start > Settings > Printers while a local drive or directory can be shared by right clicking on that object under Windows Explorer.

3. SOFTWARE

All networked computers run Windows 95 and core applications include:

- Microsoft Word 97 — Wordprocessing
- Microsoft Excel 97 — Spreadsheet
- Microsoft Powerpoint 97 — Presentation
- Microsoft Access 97 — Database

Optional applications:

- Microsoft Publisher 97 — Desktop publishing
- MapInfo Professional 4.5 — Mapping and GIS
- Internet Explorer — Web browsing and email
- Procomm 32 — File transfer

Utilities include:

- Norton Utilities 95 — Toolkit
- McAfee VirusScan 95 — Virus prevention

Specialist applications:

- SigmaPlot — Biological models

4. OPERATIONS

4.1 Start Up and Log on

After powering up the computer and execution of the start up files that include CONFIG.SYS and AUTOEXEC.BAT, Windows will start and the user prompted with a log on window. The password should be entered as specified in above table. If your computer shares other resources such as CD-ROM or drives and directories, you should not stop sharing them unless to need to prevent other users from accessing these resources.

4.2 Log off

When you exit Windows from Start > Shut Down any shared resources will no longer be available to other users on the network. Note that a computer should never be powered down unless the Start > Shut Down operation has been completed and the operating system will advise when power down can be carried out.

4.3 Microsoft applications

It is assumed that users are familiar with launching and operating Microsoft core applications and this subject will not be addressed in this manual.

4.4 Internet access

Access to Internet has been set-up on Server computer for all networked users though Wingate and MDaemon applications that only run on Server. MDaemon provides unique mailboxes that include:

Raymond Newnham	RaymondN
Ian Bertram	IanB
Ben Ponia	BenP
Josh Mitchell	JoshM
Rangi Dean	RangiD
George Matutu	GeorgeM
Koroa Raumea	KoroaR
Nooroa Roi	NooroaR

Users access their mailboxes through Internet Mail and additional users can be added through a request to Gatepoly where a new user (for example: NewU@mmr.gov.ck) would be aliased to rar@mmr.gov.ck.

4.5 McAfee Data Files

Mcafee VirusScan has been installed on all networked computers and this software consists of an engine and datafiles. An updated data file set is released every month and can be downloaded from www.mcafee.com. This set should be saved under \\server\app\utl\mcafee\datfiles.

5. MANAGEMENT

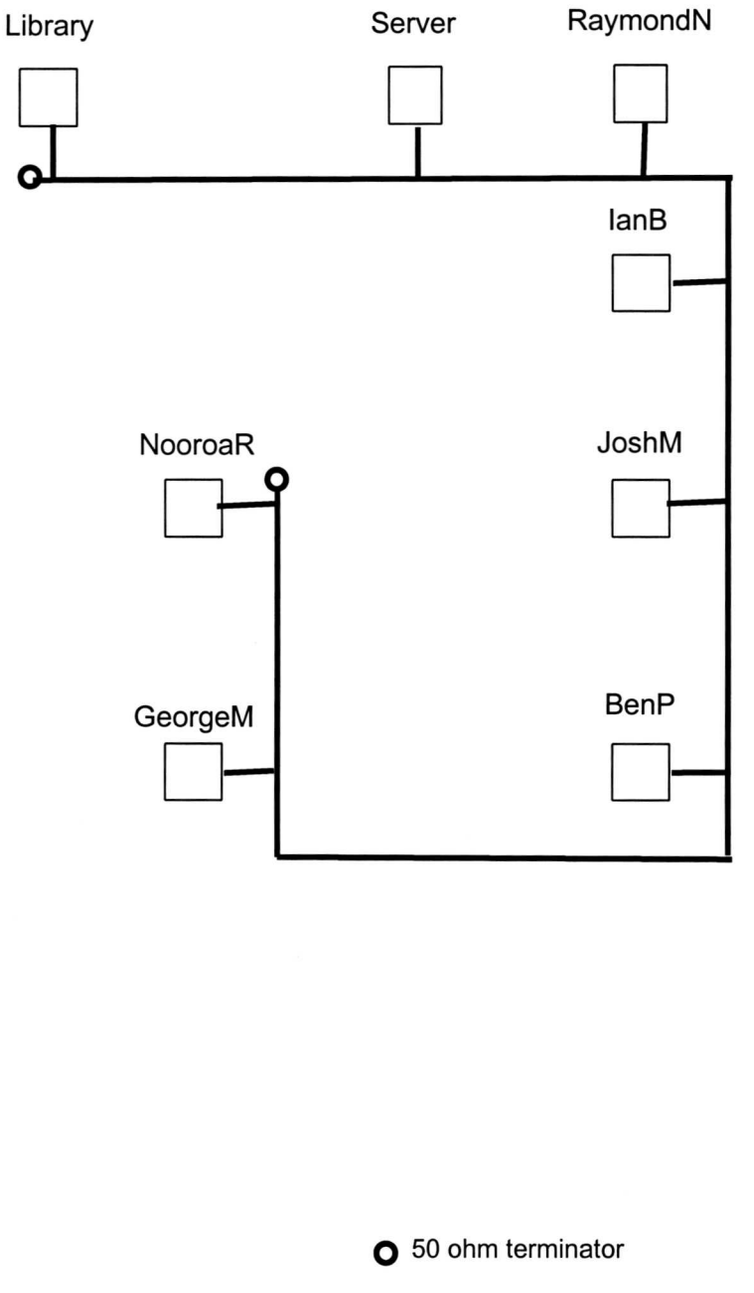
There should be a staff member responsible for each particular computer and there should be one staff member responsible for the overall management of the network.

The staff member responsible for a particular computer should ensure that the equipment is serviceable and clean, the software is operational and up to date and other users should acknowledge this responsibility.

The staff member responsible for the overall management of the network should ensure that the network is operational, resource and data sharing is operational and that all-peripheral equipment is accounted for and stored in a secure place. All other staff members should acknowledge this responsibility.

ATTACHMENT A – NETWORK SCHEMATIC

MINISTRY OF MARINE RESOURCES
HEADQUARTERS



MINISTRY OF MARINE RESOURCES INFORMATION SYSTEM REPORT AND RECOMMENDATION

Ministry of Marine Resources
Rarotonga, Cook Islands

Tel: +682 28721 Fax: +682 29721 Email: rar@mmr.gov.ck

8 April 1998

Leslie Allinson, Information Technology Manager, les@sopac.org.fj

South Pacific Applied Geoscience Commission (SOPAC)
Private Mail Bag, GPO
Suva, Fiji

Tel: +679 381377, Fax: +679 370040, Web: www.sopac.org.fj

INTRODUCTION

A two week visit was made to Ministry of Marine Resources (MMR) from Wednesday 25 March to Wednesday 2 April by Franck Martin, Database Development Officer, SOPAC and a three week visit from Wednesday 25 March to Wednesday 9 April by Leslie Allinson, Information Technology Manager, SOPAC. This report outlines tasks and makes recommendations accordingly.

EQUIPMENT SUPPLIED

The following equipment was supplied to MMR, the National Disaster Management Office (NDMO) and workshop participants.

No	Description	Recipient
1	HP Vectra 486/50DX SPU S/N 3410A03499	MMR
1	NEC C600 15" monitor S/N 6082102427	MMR
1	Iomega Zip Drive	MMR
1	Network cable, terminators, tees and crimp connectors	MMR
1	MapInfo Professional 4.5 upgrade	MMR
1	MapBasic 4.5	MMR
1	Microsoft Office 97 Professional upgrade	MMR
6	Iomega Zip cartridges	MMR
1	Iomega Zip Drive	NDMO
1	MapInfo Professional 4.5	NDMO
6	Iomega Zip cartridges	NDMO
20	Binder with course notes	participants

The desktop computer was network ready and targeted for Library with data recovered from MMR old library backup. The Zip drive was for transfer and backup of GIS data while the MapInfo/MapBasic software was that used for the workshop. The Microsoft Office 97 Update was to ensure that MMR was compatible with the latest version of MapInfo and with SOPAC and other regional organisations.

A letter was sent to Customs listing major items of equipment supplied. See Attachment A and \\server\data\doc\l_cust_a.doc.

EQUIPMENT SENT FOR REPAIR

The following equipment was identified as faulty and sent back to ABS Microfirm for replacement:

1 only Faulty motherboard from Compaq DeskPro.
1 only Faulty Quantum Bigfoot 1.2GB hard drive from Compaq DeskPro.
1 only Faulty Seagate 1.2GB hard drive that was sent as a replacement for a Quantum Bigfoot from Compaq DeskPro 5133.
1 only Faulty Creative Labs CD-ROM unit from Compaq DeskPro.

The motherboard and hard drives should be replaced under the three year warranty while it is possible that the CD has only a one year warranty.

There will be costs associated with clearing goods into Australia as the shipment was not sent as previously advised by John Mamacan and there will be costs associated with shipping replacement items.

See Attachment B and \\server\data\doc\l_abs_a.doc

WORKSHOP

The main focus of the visit was the one week GIS Workshop Using MapInfo where there were 18 participants. The participant list is included as Attachment C. See folder with handouts for workshop content. A common task during the workshop was the conversion or translation of survey data with a non earth projection and datum at the Post Office benchmark to UTM WGS84 with UTM zone 4 southern hemisphere. The x and y translation instructions are provided as Attachment D.
The workshop was evaluated by the participants and rated as successful. It was unanimously agreed that the formation of a GIS User Group would be beneficial for sharing of resources and data as well as a forum for development of technical procedures that would asst policy makers in planing and

infrastructure development. It was agreed that MMR would host the first of regular monthly meetings of the group and Nooroa Roi would co-ordinate this first meeting.

Recommendation 1: MMR be actively involved in GIS User Group meetings

POST WORKSHOP ACTIVITIES

Assistance was provided to MMR, MOID, Water Department and Power Utility with further work in GIS applications using MapInfo.

In particular two application were developed for MMR:

- National Fishing Vessel Activity System
- Manihiki Pearl Farm Management System

A meeting was held at Survey Department with Water Department and the use of a Differential GPS unit was discussed. It was understood that this DGPS had been provided in 1997 under NZODA funding and due to drastic staff cuts within Survey it had not been possible to use the DGPS. Options were explored to utilise the DGPS for outputs for the Water and Power Utilities and MMR. An option would be for a regional organisation such as SOPAC to provide training in the operation and use of the unit as part of a wider program to assist the Water and Power utilities and MMR under the SOPAC work program.

NETWORK

On arrival, the MMR network was non-operational due to damage to cabling during cyclone Pam in December 1997 and sufficient cables and connectors were brought to restore the network functionality during the visit.

The current network uses a thinlan coax (10Base-2) backbone with 50 ohm terminators at each end of the line. The single coax backbone or linear bus topology network is ideal for systems that are relatively static where the total number of computers is usually no more than 5. However, when the number of computers increase there becomes a need to frequently add, remove and relocate units and unplugging connectors and breaking the backbone causes loss of network functionality. In addition, thinlan is limited to 10 Mbps. The solution is to replace the network with a star topology model using unshielded twisted pair cables (10Base-T), and wall outlets with a network hub or hubs. This provides ease of movement of computers by wiring the building with dual outlets wired to a central hub using the same analogy as power outlets. The speed of the cable will allow 100Mbps using appropraite netwrok cards and hubs.

Recommendation 2: The thinlan (10Base-2) network be replaced by a 10/100Base-T network.

A total of 7 computers have connected to the existing network and the Toshiba P75 named NooroaR was made network ready pending the purchase of a network interface PC Card.

Name	Make	CPU	RAM	HDD	CD-ROM	OS	IP
Server	Compaq	P120	16MB	2.1GB	Yes	Win95B	192.168.2.1
GeorgeM	Compaq	P120	16MB	1.2GB	No	Win95A	192.168.2.5
BenP	LCS	P166	32MB	1.2GB	Yes	Win95B	192.168.2.6
IanB	Compucon	Cryix 5/100	16MB	800MB	Yes	Win95B	192.168.2.7
RaymondN	Toshiba	P75	16MB	750MB	Yes	Win95	192.168.2.8
JoshM	LCS	P166	32MB	1.2GB	Yes	Win95B	192.168.2.9
Library	HP Vectra	486/50	16MB	2.1GB	No	Win95	192.168.2.10
NorooaR	Toshiba	P75	16MB	750MB	Yes	Win95	192.168.2.11

Recommendation 3: A network interface PC Card be purchased to allow Nooroa Roi notebook to be connected to network.

Additional RAM is needed in both Compaq Deskpro named SERVER and the Compaq Deskpro that is currently waiting on replacement motherboard and hard drive where both units have 16MB and need upgrading to 32MB. Also the HP Laserjet 6P printer with 2MB RAM has insufficient memory to print many graphics files.

Recommendation 4: Additional 16MB RAM be purchased for 2 Compaq Deskpro computers and an additional 8MB RAM for the HP Laserjet 6P printer.

There is a major disadvantage of a Windows 95 peer-to-peer network with security and backup and this can be solved with Windows NT Server 4.0 running on a suitable server. This will protect the growing data holdings within MMR.

Recommendation 5: Windows NT Server 4.0 and a server with suitable backup system be acquired.

Additional equipment needed includes a modem for dial-in and a second Zip drive where the latter could be sent to Penrhyn to allow larger datasets or software to be transferred by airmail.

Recommendation 6: A second modem and additional Zip drive be purchased.

The MMR office is located adjacent to the ocean and the working area is exposed to salt spray and dust. A room is needed that is can be permanently air-conditioned to store data and the server. A candidate area would be that currently occupied by Koroa Raumea.

Recommendation 7: An area be identified and partitioned within the building that can serve as the server and data storage room. That room should be permanently air-conditioned.

A staff member should be identified to undertake responsibility for installing the network, installing and operating the server and developing operation procedures.

Recommendation 8: A staff member be identified to assume day to day responsibility of ensuring that the Information System is operational. Josh Mitchell has the necessary aptitude to undertake this task.

That staff member should be undertake some preliminary training in network operations and SOPAC would be able to provide same subject to funding availability.

Recommendation 9: A request be submitted to SOPAC to conduct a short term fellowship for Josh Mitchell to assist him in assuming the role of network manager.

INTERNET

MMR Rarotonga and Penrhyn have Internet email connections to Gatepoly and access to Oyster.net was investigated as an alternative where the former is email only while the latter offers full Internet. The monthly subscription cost to both services is similar at NZD 30 and NZD 20 respectively and Oyster.net provides 3 free hours of full Internet access, after which time the access is NZD 15 per hour. The problem is that there is no way to control full Internet usage and it was agreed that maintaining the subscription to Gatepoly was the better option.

Two software packages were downloaded at Marine Surveillance using their full Internet connection that would allow all networked computers in MMR full Internet access via the single dial-up connection and allow individual users unique mailboxes.
The users and mailbox names are:

Raymond Newnham	RaymondN
Ian Bertram	IanB
Ben Ponia	BenP
Josh Mitchell	JoshM
Rangi Dean	RangiD
George Matutu	GeorgeM
Koroa Raumea	KoroaR
Nooroa Roi	NooroaR

The packages downloaded and installed on the server were Wingate and Mdaemon where the latter was a 30 day trial.

Recommendation 10: A seven plus user licence be purchased from MDaemeon.

EQUIPMENT FOR HEADQUARTERS

Equipment is needed as identified in the previous recommendations and quotations were sought from three suppliers.

1. ABS Microfirm, a Sydney based computer supply company that has previously supplied equipment to MMR.
2. Mereken Co., a local computer supplier that provided equipment for the Forum meeting in 1997. There are two units in MMR that were supplied by Mereken.
3. Pacific Computers, a local supplier that has recently been formed.

Quotations were received from all companies and the following was noted.

- There is minimal local servicing of equipment and the majority of faulty equipment must be returned to source. This favours suppliers who source equipment from New Zealand as opposed to Australia.
- Local suppliers will provide a level of support, in particular network installation.
- Mereken Co. is offering LCS as well as Compaq and on a similar specification LCS is considerably more cost effective.

The following table compares summary of quotes.

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

SUMMARY	ABS NZD	Mereken NZD	PacComp NZD
Hardware server	13,168	10,472	13,528
Hardware network	2,327	2,123	2,383
Software	1,439	1,620	1,650
Consumables	1,462	1,306	1,263
Freight estimate	1,445	750	0
TOTAL	19,842	16,271	18,824

Note PacComp prices include freight

Notes:

- ABS ships from Sydney while Mereken and Pacific Computers ship from Auckland.
- The freight is estimated for both ABS and Mereken while Pacific Computers has included freight in prices.
- Pacific Computers has provided quotes both with and without levy and VAT.
- See Attachment E for quotes and responses.

Recommendation 11: Mereken Co. should be selected as the supplier for the headquarters equipment as their price is the most competitive. Note that prices do not include levy and VAT as it is understood that funding is aid and not subject to these tariffs.

EQUIPMENT FOR MINISTER'S OFFICE

Further to request from Secretary, MMR a notebook computer was identified for the Minister together with a printer and backup system for the Minister's Personal Assistant.

The equipment consists of:

HARDWARE

1 only Compaq or Toshiba Notebook P166MMX 16MB RAM 2GB HDD 12.1" DSTN
1 only HP Laserjet 6L printer
1 only Iomega Zip drive

CONSUMABLES

1 only HP Laserjet 6L toner cartridge
5 only Iomega Zip cartridge 100MB

Quotations were sought from the three suppliers and are included in spreadsheet in Attachment C.

Indicative prices landed in Rarotonga **without** levy and VAT are as follows:

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

SUMMARY	ABS NZD	Mereken NZD	PacComp NZD
Hardware	4,774	3,745	4,429
Consumables	397	221	226
Freight estimate	723	150	0
TOTAL	5,894	4,116	4,654

Notes:

- ABS ships from Sydney while Mereken and Pacific Computers ship from Auckland.
- The freight is estimated for both ABS and Mereken while Pacific Computers has included freight in prices.
- Pacific Computers has provided quotes both with and without levy and VAT.
- See Attachment E for quotes and responses.

Recommendation 12: Mereken Co. should be selected as the supplier for the Minister's Office equipment as their price is the most competitive. Note that levy and VAT will have to be paid on this equipment set.

SUMMARY OF RECOMMENDATIONS

Recommendation 1: MMR be actively involved in GIS User Group meetings

Recommendation 2: The thinlan (10Base-2) network be replaced by a 10/100Base-T network.

Recommendation 3: A network interface PC Card be purchased to allow Nooroa Roi notebook to be connected to network.

Recommendation 4: Additional 16MB RAM be purchased for 2 Compaq Deskpro computers and an additional 8MB RAM for the HP Laserjet 6P printer.

Recommendation 5: Windows NT Server 4.0 and a server with suitable backup system be acquired.

Recommendation 6: A second modem and additional Zip drive be purchased.

Recommendation 7: An area be identified and partitioned within the building that can serve as the server and data storage room. That room should be permanently air-conditioned.

Recommendation 8: A staff member be identified to assume day to day responsibility of ensuring that the Information System is operational. Josh Mitchell has the necessary aptitude to undertake this task.

Recommendation 9: A request be submitted to SOPAC to conduct a short term fellowship for Josh Mitchell to assist him in assuming the role of network manager.

Recommendation 10: A seven plus user licence be purchased from MDaemeon.

Recommendation 11: Mereken Co. should be selected as the supplier for the headquarters equipment as their price is the most competitive. Note that prices do not include levy and VAT as it is understood that funding is aid and not subject to these tariffs.

Recommendation 12: Mereken Co. should be selected as the supplier for the Minister's Office equipment as their price is the most competitive. Note that levy and VAT will have to be paid on this equipment set.

ATTACHMENT A – Letter to Customs

18 March 1998 Ref: Cook Islands - IT Assistance

Willie Kauvai
Customs Department
Ministry of Finance and Economic Management

Re: SOPAC GIS Workshop Equipment

Kia Orana Willie

For your information, please find a list of equipment brought into the Cook Islands on 17 March 1998 by SOPAC personnel for the above workshop.

No	Description	Recipient	Value NZD
1	HP Vectra 486/50DX SPU S/N 3410A03499	MMR	$0.0
1	NEC C600 15" monitor S/N 6082102427	MMR	$230.00
1	Iomega Zip Drive	MMR	$275.00
1	Iomega Zip Drive	NDMO	$275.00
1	Network tools & software	SOPAC	nil
20	Binder with course notes	participants	nil
	TOTAL		**$780.00**

The HP Vectra SPU (system processor unit) was purchased by SOPAC for an estimated NZD 1,500 three years ago old while the NEC monitor was purchased two years ago for an estimated NZD 700. Both items have been depreciated at 33% per year over 3 years to arrive at their estimated value.

After the workshop, all above items will remain with the recipient that includes Ministry of Marine Resources (MMR), National Disaster Management Office (NDMO), individual workshop participants and SOPAC.

In addition a desktop computer has been brought for the workshop that is the personal Thank you very much for your assistance with this project.

Kind Regards

Les Allinson
Information Technology Manager

ATTACHMENT B – Letter to ABS Microfirm

19 March 1998 Our ref: ABS Microfirm

John Mamacan
ABS Microfirm Pty Ltd
624 Forest Road
Bexley NSW 2207
Australia

Dear John

This letter accompanies the following items in one boxes:

1 only Faulty motherboard from Compaq DeskPro 5133 desktop S/N 7624HVS40932 from Tunsuna order 1008 received Sep 1996 in Rarotonga. The board exhibits a 102-System board failure**. Please arrange replace and return.**

1 only Faulty Quantum Bigfoot 1.2GB hard drive from Compaq DeskPro 5133 desktop S/N 7624HVS40932 from Tunsuna order 1008 received Sep 1996 in Rarotonga. **Please arrange replace and return.**

1 only Faulty Seagate 1.2GB hard drive that was sent by you as a replacement for a Quantum Bigfoot from Compaq DeskPro 5133 desktop S/N 7624HVS40363 from Tunsuna order 1008 received Sep 1996 in Rarotonga. **Please arrange replace and return.**

1 only Faulty Creative Labs CD-ROM unit from Compaq DeskPro 5133 desktop S/N 7624HVS40363 from Tunsuna order 1008 received Sep 1996 in Rarotonga. **Please arrange replace and return.**

I would be most grateful if you could give the replacement of the above your earliest attention as it is understood that the last replacement set for Cook Islands took 6 months which is unacceptable.

As the return freight will not be a major cost, please invoice SOPAC.

Yours sincerely

Leslie Allinson
Information Technology Manager

ATTACHMENT C – Participant List

GIS Workshop - Using MapInfo

Rarotonga, Cook Islands
23 – 27 March 1998

Participants

No	Name	Organisation	Address	Tel	Fax	Email
1	Nooroa Roi	MMR	PO Box 85	28721	29721	NooroaR@mmr.gov.ck
2	Koroa Raumea	MMR	PO Box 85	28721	29721	KoroaR@mmr.gov.ck
3	Josh Mitchell	MMR	PO Box 85	28721	29721	JoshM@mmr.gov.ck
4	Ben Ponia	MMR	PO Box 85	28721	29721	BenP@mmr.gov.ck
5	Ian Bertram	MMR	PO Box 85	28721	29721	IanB@mmr.gov.ck
6	Dorothy Solomona	MMR	T.M.R.C, Penrhyn	42097	42089	Pen@mmr.gov.ck
7	Tu Tangi	NDMO	PO Box 101	22499	29331	Tony@disaster_management.gov.ck
8	Anna Tiraa	TCA	PO Box 817	29906	29906	Kakerori@tca.co.ck
9	Robert Ben	TCA	PO Box 817	29906	29906	Kakerori@tca.co.ck
10	Tangi Tereapii	Ministry of Energy	PO Box 129	24484	24485	
11	David Akaruru	Ministry of Energy	PO Box 129	24484	24485	
12	Tenga Mana	MOID	PO Box 383	20321	24321	HQMoid@moid.gov.ck
13	Vaipo Mataora	MOWEPP	PO Box 114	29433	27433	
14	Adrian Teotahi	MOWEPP	PO Box 102	20034	21134	
15	Kelvin Passfield	FERC / PICCAP	PO Box 817	22839	22839	Passfield@gatepoly.co.ck
16	Daryl Rairi	TOG–T	PO Box 598	24360	24365	Onugrp@gatepoly.co.ck
17	Alistair Newbigging	Te Aponga	PO Box 112	20054	21944	
18	Ioteva Mataora	SPOT	PO Box 343	27132	24242`	Teva@spot.co.ck
19	Franck Martin	SOPAC	Private Mail Bag, Suva	381377	370040	Franck@sopac.org.fj
20	Les Allinson	SOPAC	Private Mail Bag, Suva	381377	370040	Les@sopac.org.fj

ATTACHMENT D – Translation Instructions

Notes on translating AutoCAD layers to MapInfo.

AutoCAD layers are Non Earth with origin at Rarotonga Post Office benchmark and distance in metres.

To convert from AutoCAD to MapInfo:

Launch AutoCAD

Export layer(s) in DXF format
Import layer(s) as DXF in MapInfo

Method 1
Save each layer as MID/MIF
Edit MIF file and add lines at front:
...
coordsys earth projection 8,104,"m",-159,0,0.9996,500000,10000000
transform 1,1,419560.683,7654748.665
...

Method 2
Set import projection as UTM WGS84 Zone4 South

	DXF	MapInfo
Point 1 x	0	419560.683
Point 1 y	0	7654748.665
Point 2 x	10	419570.683
Point 2 y	10	7654758.665

Method 2 is faster than Method 1

ATTACHMENT E – Quotations

REQUEST FOR QUOTATION WITH PRICE ESTIMATES
MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE SERVER				
1	Compaq Prosignia 200 small business server 128MB RAM, 2 x 6.4GB UW SCSI HDD 10/100Base-T, CD		9,000.00	9,000.00
1	15" Compaq monitor		690.00	690.00
1	HP DDS-3 tape backup unit external + cable		2,000.00	2,000.00
1	APC 600VA Smart UPS		550.00	550.00
1	Extra 16MB RAM for Compaq Deskpro 2000		180.00	180.00
1	Extra 8MB RAM for HP Laserjet 6P		120.00	120.00
HARDWARE NETWORK				
1	HP Advance Stack 10Base-T 16 port		1,000.00	1,000.00
10	Clipsal twin RJ-45 outlet sockets and wall plates		25.00	250.00
25	RJ-45 Crimp plugs		1.00	25.00
1	Roll 1000ft UTP cable Cat5		500.00	500.00
1	Xircom Ethernet 10Base-T/10Base-2 PC Card		200.00	200.00
1	RG-45 crimp connector		75.00	75.00
1	USR external 33.6 modem + cable		250.00	250.00
SOFTWARE				
1	Microsoft NT Server 4.0 - 5 user		1,000.00	1,000.00
CONSUMABLES				
20	HP DDS-3 tape cartridge		50.00	1,000.00
10	Iomega ZIP cartridge		30.00	300.00
				17,140.00

SUMMARY

	AUD	NZD	USD
Hardware server	10,411	12,540	6,831
Hardware network	1,909	2,300	1,253
Software	830	1,000	545
Consumables	1,079	1,300	708
Freight	0	0	0
TOTAL	14,230	17,140	9,336

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE				
1	Toshiba 300CDS notebook P166MMX 16Mb RAM 2GB HDD 12.1" DSTN		3,000.00	3,000.00
1	HP Laserjet 6L		1,050.00	1,050.00
1	Iomgega ZIP drive external		400.00	400.00
CONSUMABLES				
1	HP Laserjet 6L toner cartridge		120.00	120.00
5	Iomega ZIP cartridge		30.00	150.00
				4,720.00

SUMMARY

	AUD	NZD	USD
Hardware	3,694	4,450	2,424
Consumables	224	270	147
Freight	0	0	0
TOTAL	4,720	4,720	2,571

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

QUOTATION FROM ABS, SYDNEY
MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE SERVER				
1	Compaq Prosignia 200, 233 MHz Pentium II 128MB RAM, 2 x 4.3GB UW SCSI HDD 10/100Base-T, CD		8,311.25	8,311.25
1	15" Compaq monitor		698.63	698.63
1	HP DDS-3 tape backup unit external + cable		2,800.53	2,800.53
1	APC 600VA Smart UPS		993.74	993.74
1	Extra 16MB RAM for Compaq Deskpro 2000		228.86	228.86
1	Extra 8MB RAM for HP Laserjet 6P		134.91	134.91
HARDWARE NETWORK				
1	HP Advance Stack 10Base-T 16 port		880.51	880.51
10	Clipsal twin RJ-45 outlet sockets and wall plates		24.09	240.91
25	RJ-45 Crimp plugs		1.20	30.11
1	Roll 100m UTP cable Cat5		421.59	421.59
1	Xircom Ethernet 10Base-T/10Base-2 PC Card		343.29	343.29
1	RG-45 crimp connector		114.43	114.43
1	USR Sportster external 33.6 modem + cable		296.31	296.31
0	USR Courier external 33.6 modem + cable		391.47	0.00
SOFTWARE				
1	Microsoft NT Server 4.0 - 5 user		1,439.41	1,439.41
CONSUMABLES				
4	HP DDS-3 tape cartridge 5 pack		302.34	1,209.35
1	Iomega ZIP cartridge 10 pack		252.95	252.95
				18,396.77

SUMMARY

	AUD	NZD	USD
Hardware server	10,932	13,168	7,173
Hardware network	1,932	2,327	1,268
Software	1,195	1,439	784
Consumables	1,214	1,462	797
Freight estimate	1,200	1,445	787
TOTAL	16,473	19,842	10,808

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE				
1	Compaq 1560 notebook P166MMX 16Mb RAM 2GB HDD 12.1" DSTN		3,649.72	3,649.72
1	HP Laserjet 6L		825.10	825.10
1	Iomgega ZIP drive external		298.72	298.72
CONSUMABLES				
1	HP Laserjet 6L toner cartridge		144.54	144.54
1	Iomega ZIP cartridge 10 pack		252.95	252.95
				5,171.04

SUMMARY

	AUD	NZD	USD
Hardware	3,963	4,774	2,600
Consumables	330	397	217
Freight estimate	600	723	394
TOTAL	4,893	5,894	3,210

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MEREKEN CO., RAROTONGA
MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE SERVER				
0	Compaq Prosignia 200, 233 MHz Pentium II 128MB RAM, 2 x 4.3GB UW SCSI HDD 10/100Base-T, CD		10,385.00	0.00
0	15" Compaq monitor		730.00	0.00
1	LCS MultiServer ES 266MHz CPU Dual capable motherboard 128MB RAM Integrated Adaptec 7880UW SCSI controller 2 x 4.5GB UW SCSI hard drives 24x IDE CD-ROM (Compaq list a 16x IDE) 15" NEC 1024x1024 .28dot colour monitor Integrated 10/100 Ethernet (Intel) Black Super Tower case with dual 300W hot-swap PSU 3 year RTB warantee 1yr CD-ROM		6,495.00	6,495.00
0	LCS MultiServer ER with Hewlett Packard NetRAID controller and 3 x 4.5GB hard drives running under RAID 5		8,495.00	0.00
1	HP DDS-3 tape backup unit external + cable		2,795.00	2,795.00
1	APC 700VA Smart UPS (not V/S)		988.00	988.00
1	Extra 16MB RAM for Compaq Deskpro 2000		129.00	129.00
1	Extra 8MB RAM for HP Laserjet 6P		65.00	65.00
HARDWARE NETWORK				
1	HP Advance Stack 10Base-T 16 port		543.00	543.00
10	Clipsal twin RJ-45 outlet sockets and wall plates		26.00	260.00
25	RJ-45 Crimp plugs (copper)		1.20	30.00
1	Roll 300m UTP cable Cat5		520.00	520.00
1	Xircom Ethernet 10Base-T/10Base-2 PC Card		370.00	370.00
1	RG-45 crimp connector		85.00	85.00
1	USR external 33.6 modem + cable		315.00	315.00
SOFTWARE				
1	Microsoft NT Server 4.0 - 5 user		1,620.00	1,620.00
CONSUMABLES				
20	HP DDS-3 tape cartridge		52.80	1,056.00
10	Iomega ZIP cartridge		25.00	250.00
				15,521.00

SUMMARY

	AUD	NZD	USD
Hardware server	8,694	10,472	5,704
Hardware network	1,763	2,123	1,156
Software	1,345	1,620	882
Consumables	1,084	1,306	711
Freight nil as all prices include freight	623	750	409
TOTAL	13,508	16,271	8,863

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE				
1	Toshiba 300CDS notebook P166MMX 16Mb RAM 2GB HDD 12.1" DSTN		2,700.00	2,700.00
1	HP Laserjet 6L		750.00	750.00
1	Iomgega ZIP drive external		295.00	295.00
CONSUMABLES				
1	HP Laserjet 6L toner cartridge		96.00	96.00
5	Iomega ZIP cartridge		25.00	125.00
				3,966.00

SUMMARY

	AUD	NZD	USD
Hardware	3,109	3,745	2,040
Consumables	183	221	120
Freight estimate	125	150	82
TOTAL	3,417	4,116	2,242

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
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1 NZD =	0.5447 USD

QUOTATION FROM PACIFIC COMPUTERS VAT AND LEVY INCLUDED
MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE SERVER				
1	Compaq Prosignia 200, 233 MHz Pentium II 10/100Base-T, 16X CD		4,200.00	4,200.00
1	128MB RAM Compaq ECC SIMM Kit		3,200.00	3,200.00
2	4.3GB UW SCSI HDD - Quantum		1,193.13	2,386.25
1	15" NEC monitor		635.00	635.00
1	HP DDS-3 tape backup unit external + cable	C1556B	3,924.00	3,924.00
1	APC 700 VA Smart UPS with Powerchute bundle		1,310.00	1,310.00
1	Extra 16MB RAM for Compaq Deskpro 2000		171.00	171.00
1	Extra 8MB RAM for HP Laserjet 6P		360.00	360.00
HARDWARE NETWORK				
1	HP Advance Stack 10Base-T 16 port		1,112.00	1,112.00
10	Clipsal twin RJ-45 outlet sockets and wall plates	Note 1	26.00	260.00
25	RJ-45 Crimp plugs	Note 1	1.20	30.00
1	Roll 300m UTP cable Cat5	Note 1	520.00	520.00
1	Xircom Ethernet 10Base-T/10Base-2 PC Card		398.00	398.00
1	RG-45 crimp connector	Note 1	85.00	85.00
1	Wisecom external 33.6 modem + cable		299.00	299.00
SOFTWARE				
1	Microsoft NT Server 4.0 - 5 user		2,019.00	2,019.00
CONSUMABLES				
20	HP DDS-3 tape cartridge		63.70	1,274.00
10	Iomega ZIP cartridge		33.50	335.00
				22,518.25

SUMMARY

	AUD	NZD	USD
Hardware server	13,438	16,186	8,817
Hardware network	2,245	2,704	1,473
Software	1,676	2,019	1,100
Consumables	1,336	1,609	876
Freight nil as all prices include freight	0	0	0
TOTAL	18,695	22,518	12,266

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE				
1	Compaq 1560 notebook P166MMX 16Mb RAM 2GB HDD 12.1" DSTN			3,800.00
1	HP Laserjet 6L			980.00
1	Iomgega ZIP drive external			380.00
CONSUMABLES				
1	HP Laserjet 6L toner cartridge			101.00
5	Iomega ZIP cartridge			172.00
				5,433.00

SUMMARY VAT + LEVY PAID

	AUD	NZD	USD
Hardware	4,284	5,160	2,811
Consumables	227	273	149
Freight nil as all prices include freight	0	0	0
TOTAL	5,433	5,433	2,959

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

NOTES

1 Prices not provided by Pacific Computers so quotes from Mereken used

QUOTATION FROM PACIFIC COMPUTERS VAT AND LEVY EXCLUDED
MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE SERVER				
1	Compaq Prosignia 200, 233 MHz Pentium II 10/100Base-T, 16X CD		3,590.00	3,590.00
1	128MB RAM Compaq ECC SIMM Kit		2,756.00	2,756.00
2	4.3GB UW SCSI HDD - Quantum		937.50	1,875.00
1	15" NEC monitor		518.00	518.00
1	HP DDS-3 tape backup unit external + cable	C1556B	3,201.00	3,201.00
1	APC 700 VA Smart UPS with Powerchute bundle		1,160.00	1,160.00
1	Extra 16MB RAM for Compaq Deskpro 2000		135.00	135.00
1	Extra 8MB RAM for HP Laserjet 6P		292.58	292.58
HARDWARE NETWORK				
1	HP Advance Stack 10Base-T 16 port		921.99	921.99
10	Clipsal twin RJ-45 outlet sockets and wall plates	note 1	26.00	260.00
25	RJ-45 Crimp plugs	note 1	1.20	30.00
1	Roll 300m UTP cable Cat5	note 1	520.00	520.00
1	Xircom Ethernet 10Base-T/10Base-2 PC Card		325.86	325.86
1	RG-45 crimp connector	note 1	85.00	85.00
1	Wisecom external 33.6 modem + cable		240.62	240.62
SOFTWARE				
1	Microsoft NT Server 4.0 - 5 user		1,650.00	1,650.00
CONSUMABLES				
20	HP DDS-3 tape cartridge		49.74	994.80
10	Iomega ZIP cartridge		26.80	268.00
				18,823.85

SUMMARY

	AUD	NZD	USD
Hardware server	11,231	13,528	7,368
Hardware network	1,979	2,383	1,298
Software	1,370	1,650	899
Consumables	1,048	1,263	688
Freight nil as all prices include freight	0	0	0
TOTAL	15,628	18,824	10,253

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

NO.	ITEM	PART NO.	UNIT NZD	TOTAL NZD
HARDWARE				
1	Compaq 1560 notebook P166MMX 16Mb RAM 2GB HDD 12.1" DSTN		3,329.00	3,329.00
1	HP Laserjet 6L		788.64	788.64
1	Iomgega ZIP drive external		311.00	311.00
				0.00
CONSUMABLES				
1	HP Laserjet 6L toner cartridge		83.56	83.56
5	Iomega ZIP cartridge		28.40	142.00
				4,654.20

SUMMARY VAT + LEVY PAID

	AUD	NZD	USD
Hardware	3,677	4,429	2,412
Consumables	187	226	123
Freight nil as all prices include freight	0	0	0
TOTAL	4,654	4,654	2,535

EXCHANGE RATES - 3 APR 1998

1 NZD =	0.8302 AUD
1 NZD =	1.0499 FJD
1 NZD =	0.5447 USD

NOTES

1 Prices not provided by Pacific Computers so quotes from Mereken used

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
RESEARCH UNIT EQUIPMENT LIST

SUMMARY	ABS NZD	Mereken NZD	PacComp NZD
Hardware server	13,168	10,472	13,528
Hardware network	2,327	2,123	2,383
Software	1,439	1,620	1,650
Consumables	1,462	1,306	1,263
Freight estimate	1,445	750	0
TOTAL	19,842	16,271	18,824

Note PacComp prices include freight

MINISTRY OF MARINE RESOURCES, COOK ISLANDS
MINISTER'S OFFICE EQUIPMENT LIST

SUMMARY	ABS NZD	Mereken NZD	PacComp NZD
Hardware	4,774	3,745	4,429
Consumables	397	221	226
Freight estimate	723	150	0
TOTAL	5,894	4,116	4,654

Note PacComp prices include freight